



THE EFFECT OF PEPPERMINT AND LEMONGRASS AROMATHERAPY CANDLES TO NAUSEA VOMITING IN FIRST TRIMESTER PREGNANT WOMEN

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ABSTRACT	Keywords
<p>According to studies conducted in Indonesia, 14.8% of all pregnancies involved women who experienced nausea and vomiting. 40–60% of multigravidas and 60–80% of primigravidas report experiencing nausea and vomiting. In one out of every 1,000 pregnancies, these symptoms worsen. The purpose of this study is to ascertain whether peppermint and lemongrass aromatherapy candles can lessen nausea and vomiting in pregnant women during the first trimester. Quasi-experimental with a one-group pretest-posttest design was the research methodology employed. 24 pregnant women who suffered nausea and vomiting in the first trimester of their pregnancies served as the study's subjects. The PUQE-24 was used to gauge the severity of nausea and vomiting prior to the intervention. Three times daily for five days, aromatherapy candles with peppermint and lemongrass were distributed. The PUQE-24 was used to gauge the severity of nausea and vomiting following the intervention. The analysis's findings revealed that the amount of nausea and vomiting before and after the intervention varied, with 5.08 (3-9) vs. 2.17 (1-3), p0.05. After the intervention, there was a reduction in the severity of nausea and vomiting, allowing medical professionals, particularly midwives, to offer peppermint and lemongrass aromatherapy candles to treat nausea and vomiting in first-trimester pregnant women.</p>	<p>First Trimester Pregnant Women, Nausea Vomiting, And Aromatherapy candles</p>

INTRODUCTION

Pregnancy is a continuous process that starts from ovulation, conception, nidation, implantation and development of the embryo in the uterus until term. Women who are pregnant will experience a process of adjustment according to their trimester. The first trimester describes a trimester that can bring many responses to pregnant

women. The response that is very influential in women who are pregnant is the occurrence of nausea and vomiting during the first trimester of pregnancy in the morning and sometimes continues until the afternoon. Nausea and vomiting in pregnancy is often referred to as morning

sickness. Nausea mostly occurs in the morning (Winkjosastro, 2016).

Nausea and vomiting in pregnancy is a common complaint of almost 50-80% of pregnant women between 6 and 12 weeks of gestation. Nausea and vomiting during pregnancy if not treated immediately can cause health problems in the mother such as acid-base balance disorders, feeling weak and powerless, weight loss, dehydration, potassium deficiency, health problems in the fetus, namely lack of nutrients needed for the growth and development of the baby which if left untreated can cause morbidity to the mother and fetus (Anita et al, 2018).

Complaints of nausea and vomiting occur in 60-80% of primigravidas and 40-60% of multigravidas. One in a thousand pregnancies these symptoms become more severe (Depkes RI, 2015). According to WHO, hyperemesis gravidarum occurs all over the world, including the countries of the American continent with varying incidence rates, from 0.5-2%, as much as 0.3% in Sweden, 0.5% in California, 0.8 % in Canada, 10.8% in China, 0.9% in Norway, 2.2% in Pakistan, and 1.9% in Turkey. Meanwhile, the incidence of nausea and vomiting in Indonesia ranges from 1-3% of all pregnancies. The general incidence ratio is 4: 1000 (WHO, 2018).

According to the 2017 Indonesian Demographic and Health Survey (IDHS), eight out of ten (81%) women experience no complications during pregnancy. Among women with pregnancy complications, 5% had excessive bleeding, 3% had persistent vomiting and swelling of the feet, hands and face or headache with convulsions, 2% had heartburn and premature rupture of membranes, and 8% of women had other pregnancy problems, including high fever, epilepsy and fainting, anemia, and hypertension (National Population and Family Planning Agency, 2017).

According to the 2018 National Riskesdas report regarding disorders/complications experienced by mothers during pregnancy, including 20% of mothers who experience continuous vomiting/diarrhea, 2.4% have high fever, 3.3% hypertension, 0.9% the fetus is immobile, 2, 6% bleeding in the birth canal, 2.7% amniotic fluid discharge and leg swelling accompanied by seizures, 2.3% prolonged cough, 1.6% chest pain/pounding heart, and 7.2% other disorders/complications (Research and Development Agency of the Ministry of Health) RI, 2019).

There are many ways that can be done to help reduce nausea and vomiting in pregnant women, one of which is using non-pharmacological therapy which is classified as safe for pregnant women. Non-pharmacological therapy is non-instructive, non-invasive, inexpensive, simple, effective and without adverse side effects. Non-pharmacological therapy is a type of complementary nursing therapy that can be used as an intervention to treat nausea including homeopathy, aromatherapy, osteopathy, reflexology and acupressure (Matthews, A. et al., 2015).

Nausea in early pregnancy can also be overcome by using complementary therapies, including peppermint and lemongrass aromatherapy. Aromatherapy provides a variety of effects for the inhaler, such as calmness, freshness, and can even help pregnant women overcome nausea (Santi, 2013; Dwi Rukma. 2013).

Peppermint Essential Oil is the best remedy for digestive problems. This oil contains reliable anti-convulsant and healing properties for cases of nausea, indigestion, difficulty passing gas in the stomach, diarrhea, constipation. It is also equally effective for healing headaches, migraines and fainting (Fazriyati, 2017; Wardah. 2017).

Peppermint has long been known to provide carminative and anti-spasmodic effects, specifically working on the smooth muscles of the gastrointestinal tract and bile ducts. In addition, peppermint also contains aromatherapy and essential oils that have pharmacological effects. Aromatherapy is a therapeutic action using essential oils which are useful for improving physical and psychological conditions so that they get better when essential oils are inhaled (Fazriyati, 2017; Wardah. 2017).

Based on research conducted by Yuli Yantina in 2016 regarding the effect of peppermint aromatherapy on nausea and vomiting in first trimester pregnant women, after being given peppermint aromatherapy to 35 respondents in Way Harong Timur Village, Way Lima District, Pesawaran Regency in 2016, namely 11.66, it showed that the average value of the intensity of nausea and vomiting in pregnant women in the first trimester of 35 respondents, namely 3.943 and got a p -value = 0.000 < 0.05. Based on the results of these statistical tests, it can be concluded that there is an effect of giving peppermint essential oil on the intensity of nausea and vomiting in first trimester pregnant women (Yuli Y, 2016).

The results of another study by Jaelani regarding peppermint aromatherapy is a way of healing diseases by using peppermint essential oil, where 2-3 drops of peppermint essential oil on tissue paper or a handkerchief attached to the nose and inhaling the aroma can reduce nausea and vomiting. Essential oils can affect brain activity through the nervous system associated with the sense of smell. This response will be able to stimulate the production of brain nerve conductors (neurotransmitters), which are related to the recovery of psychological conditions. The effectiveness of active substances can help reduce prostaglandin production and play an important role in controlling pain and

hormonal balance, including reducing nausea and vomiting (Jaelani, 2017).

The results of an initial survey conducted by researchers at BPM Era Zora found that many pregnant women in their first trimester experienced nausea and vomiting and they said that when they experienced nausea they only lay in bed, rarely took anti-vomiting drugs and even drank plain water they felt nauseous, and had never using drugs (non-pharmacological) such as acupuncture techniques, acupressure, hypnotherapy, ginger extract, and aromatherapy candles. In this study the non-pharmacological therapy used was peppermint and lemongrass aromatherapy candles. This study aims to analyze the effect of peppermint and lemongrass aromatherapy candles on nausea and vomiting in the first trimester of pregnant women.

METHOD

The research method used was Quasi-Experimental with the One Group Pretest-Posttest Design. The subjects of this study were first trimester pregnant women who experienced nausea and vomiting at BPM Era Zora. The number of samples in this study were 24 respondents. The inclusion criteria in the study were pregnant women who experienced grade I nausea and vomiting and did not take nausea and vomiting drugs. Exclusion criteria, pregnant women who experienced pregnancy complications and did not participate in the study to completion.

Prior to the intervention, all respondents were assessed for the intensity of nausea and vomiting using the Pregnancy Unique Quantification of Emesis and Nausea (PUQE-score) sheet developed by the Royal College of Obstetricians and Gynecologists 2016. The questionnaire contains three questions based on the time

range of nausea, vomiting and dry vomiting. The questionnaire can evaluate symptoms in the last 12 to 24 hours of the first trimester of pregnancy (Jennings 2021; Krywko, 2021). For the aromatherapy given, the researchers used peppermint and lemongrass aromatherapy extracts which were packaged like aromatherapy candles. Then an intervention was carried out by giving peppermint and lemongrass aromatherapy candles to all respondents. The intervention is carried out by lighting aromatherapy candles, the candles are lit for approximately 2-4 hours a day which is done 3 times a day. This intervention was carried out for 5 days and was assisted by midwives who had been given instructions on how to use the intervention. After the intervention was completed, the intensity of nausea and vomiting in pregnant women was reassessed using the PUQE-score.

RESULT

Tabel 1. Analysis of research subject characteristic

Variable	n
Intensity of nausea and vomiting	3 (12.5%)
Heavy (n, %)	14(58.3%)
Currently (n, %)	7 (29.2%)
Light (n, %)	

From table 1 it can be seen that the intensity of nausea and vomiting in pregnant women before administration of peppermint and lemongrass aromatherapy candles, namely from 24 respondents there were 3 people (12.5%) pregnant women who experienced severe category nausea and vomiting, 14 people (58.3%) pregnant women who experienced vomiting medium, and pregnant women who experienced mild nausea and vomiting 7 people (29.2%).

Table 2. Effect of Nausea Vomiting Intensity before and after Administering Peppermint and Lemongrass Aromatherapy Candles

Variable		n	Media	Value
			n (min-max)	
Nausea intensity	Before	2	5.08 (3-9)	< 0.001
	After	4	2.17 (1-3)	

Table 2 shows that there is a statistically significant difference in the intensity of nausea and vomiting in first trimester pregnant women before and after being given peppermint and lemongrass aromatherapy candles. Based on table 1, it was found that the intensity of perineal wound pain before giving peppermint and lemongrass aromatherapy candles had a median value of 5.08 with a minimum value of 3 and a maximum value of 9. The intensity of nausea and vomiting in pregnant women in the first trimester after being given peppermint and lemongrass aromatherapy candles decreased with a median value of 2.17, the minimum value is 1 and the maximum value is 3. The results of the statistical test obtained a p value <0.001 which means that there is a statistically significant difference in the intensity of nausea and vomiting in pregnant women before and after being given peppermint and lemongrass aromatherapy candles.

DISCUSSION

1. Beginning Conditions of Research Subjects

Subjects in this study were primigravida first trimester pregnant women who experienced nausea and vomiting and checked their pregnancies at BPM Era Zora, a total of 24 people and met the inclusion and exclusion criteria. Analysis of the initial state of the research subjects included the

intensity of nausea and vomiting in first trimester pregnant women before being given peppermint and lemongrass aromatherapy candles.

From table 1 it can be seen that the intensity of nausea and vomiting in pregnant women before administration of peppermint and lemongrass aromatherapy candles, namely from 24 respondents there were 3 people (12.5%) pregnant women who experienced severe category nausea and vomiting, 14 people (58.3%) pregnant women who experienced vomiting medium, and pregnant women who experienced mild nausea and vomiting 7 people (29.2%).

Symptoms of nausea and vomiting that often occur in the first trimester of pregnancy are usually nausea and vomiting occurring in the morning, which is called morning sickness. Morning sickness is the result of changes in the endocrine system that occur during pregnancy, especially the increase in the hormone human chorionic gonadotropin (hCG), which occurs in almost 50-80% of pregnant women (Heni, 2018).

If nausea, vomiting is excessive in pregnant women which causes weight loss, dehydration in ketosis, and abnormal electrolyte levels. Nausea and vomiting in young pregnant women, if they occur continuously can cause dehydration and electrolyte imbalance with hypochloremic alkalosis. It's not clear why these symptoms only occur in some. If this nausea and vomiting gets worse and cannot be overcome, it is called Hyperemesis gravidarum, which is reported to occur in around 0.05% -2% of all pregnancies. Excessive nausea and vomiting in pregnant women which causes weight loss, ketotic dehydration, and abnormal electrolyte levels (Yeyeh et al, 2019)

According to Dwi Rukma Santi's research, most of the first trimester pregnant women at the Rengel Health Center, Tuban Regency, from September to October 2013

experienced mild nausea before being given peppermint aromatherapy. Nearly half of the first trimester pregnant women did not experience nausea after being given peppermint aromatherapy, but half of the first trimester pregnant women after being given peppermint aromatherapy still experienced mild nausea, but the frequency of nausea decreased. So there is an effect of peppermint aromatherapy on nausea in first trimester pregnant women at the Rengel Health Center, Tuban Regency.

2. Effect of *peppermint and lemongrass* aromatherapy candles on nausea and vomiting in first trimester pregnant women

Table 2 shows that there is a statistically significant difference in the intensity of nausea and vomiting in first trimester pregnant women before and after being given peppermint and lemongrass aromatherapy candles. Based on table 1, it was found that the intensity of perineal wound pain before giving peppermint and lemongrass aromatherapy candles had a median value of 5.08 with a minimum value of 3 and a maximum value of 9. The intensity of nausea and vomiting in pregnant women in the first trimester after being given peppermint and lemongrass aromatherapy candles decreased with a median value of 2.17, the minimum value is 1 and the maximum value is 3. The results of the statistical test obtained a p value <0.001 which means that there is a statistically significant difference in the intensity of nausea and vomiting in pregnant women before and after being given peppermint and lemongrass aromatherapy candles.

The results showed that there was a decrease in the intensity of nausea and vomiting in first trimester pregnant women after giving peppermint and lemongrass aromatherapy candles. Peppermint aromatherapy is a cooling, soothing and

refreshing aromatherapy. Peppermint is also great for relieving nausea and vomiting. Menthol and Methone are the ingredients of peppermint which are useful for facilitating the digestive system, relieving bloating, nausea and cramps because they have a mild anesthetic effect, and are antispasmodic which work in the small intestine in the gastrointestinal system so as to reduce nausea and vomiting. The effect of inhaling peppermint aromatherapy is that the molecules that have been inhaled will be converted by the cilia into electrical impulses which will be sent to the brain via the olfactory system, all odors will reach the limbic system in the brain (emotional and sensory center) so that it will affect mood (Heni, 2018).

Peppermint Essential Oil is the best remedy for digestive problems. This oil contains reliable anti-convulsant and healing properties for cases of nausea, indigestion, difficulty passing gas in the stomach, diarrhea, constipation. Also equally effective for healing headaches, migraines and fainting (Santi, 2016; Dwi Rukma, 2016).

Lemongrass oil not only has a refreshing aroma, but also a myriad of health benefits. The proof, medical experts have used it to treat digestive problems and relieve high blood pressure. Citronella oil is made by extracting it from the citronella plant, so it has a refreshing citrus scent. Not only in demand because it has a refreshing aroma, citronella oil also contains various health benefits. Fragrant lemongrass is used as a traditional medicine or as an aromatherapy to treat sore throat, colitis, stomach ulcers, diarrhea, mouthwash, and stomach ache. Fragrant citronella leaves also have benefits as a fart laxative (carminative), appetite enhancer (stomacic), postpartum medicine, fever reducer, and spasm reliever (antispasmodic). Apart from fragrant citronella, citronella essential oil is also used

for infectious diseases, fever, overcoming digestive system problems and helping regenerate connective tissue (Kurniawati, 2010).

Aromatherapy oil produced from lemongrass aromatherapy functions as an antidepressant, namely suppressing and eliminating depression or stress so that it can cause a feeling of relaxation in both body and mind (Sumiartha, 2012). Lemongrass is believed to contain active ingredients that can function as analgesics, antipyretics, anti-inflammatories, antioxidants, and antidepressants.

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These results are in line with Jaelani's study. Peppermint aromatherapy is a way of healing diseases by using peppermint essential oil, where 2-3 drops of peppermint essential oil on a tissue paper or handkerchief attached to the nose and inhaling the aroma can reduce nausea and vomiting. Essential oils can affect brain activity through the nervous system associated with the sense of smell. This response will be able to stimulate the production of brain nerve conductors (neurotransmitters), which are related to the recovery of psychological conditions. The effectiveness of active substances can help

reduce prostaglandin production and play an important role in controlling pain and hormonal balance, including reducing nausea and vomiting (Jaelani, 2017).

CONCLUSION

The intensity of nausea and vomiting in pregnant women in the first trimester decreased after being given the intervention of peppermint and lemongrass aromatherapy candles so that midwives can use this therapy as an initial treatment to reduce nausea and vomiting experienced by mothers during the first trimester of pregnancy.

REFERENCES

- Wiknjosastro & Hanifa. (2016). Ilmu kandungan. Jakarta: Yayasan Bina Pusaka Sarwono Prawirohardjo
- Anita T (2018). *Mual dan muntah pada ibu hamil* Penelitian sari husada: jakarta Santi & Dwi Rukma. (2013). Pengaruh aromaterapi Blended Peppermint dan Ginger oil terhadap rasa mual pada ibu hamil trimester satu di Puskesmas Rengel Kabupaten Tuban dalam [http:// www.academia.edu](http://www.academia.edu) diakses tanggal 25 ferbruari 2021.
- National Population and Family Planning Agency. (2019). Indonesian Demographic and Health Survey 2017. <https://www.bps.go.id/statistik/2020/10/21/2111/Report-survei-demography-dankesehatan-indonesia.html> Indonesian Ministry of Health Research and Development Agency.
- Dean, C., Bannigan, K., & Marsden, J. 2018. Reviewing the effect of hyperemesis gravidarum on women's lives and mental health. *British Journal of Midwifery*. vol. 26(2): 109–119.
- Khan, Y. 2019. *Hyperemesis gravidarum*. SagePub. vol 12(8): 434–441. <https://doi.org/10.1177/1755738019850848>.
- Jambi Riskesdas. Provincial Report. (2018). https://kesmas.kemkes.go.id/assets/upload/dir_519d41d8cd98f00/files/Hasil-riskesdas2018_1274.pdf Indonesian Ministry of Health Research and Development Agency
- National Riskesdas Report (2018). Ministry of RI Research and Development Agency. <https://www.litbang.kemkes.go.id/report-research-kesehatandasar-riskesdas/>
- Yeyeh; et al. (2019). The effects of nausea and vomiting . *BAB II.pdf* . www.google.com
- Muchtaridi, M. (2015). *Aromatherapy: A Review of Medical Chemical Aspects* (1st ed.). Graha Ilmu.: <https://opac.perpusnas.go.id/DetailOpac.aspx?id=936006>.
- Prawirohardjo, Sarwono. (2016). *Obstetrics*. Jakarta: PT Bina Pustaka Sarwono Prawirohardjo.
- Kartikasari, (2017). *Aromatherapy Techniques*. <https://scholar.google.co.id/citations?user=M6casYMAAAAJ&hl=id> on Nausea in First Trimester Pregnant Women

- at the Rengel Health Center, Tuban Regency, Journal of Science, Med. 5(2). 52-55.
- Jaelani. (2017). Aroma Therapy (3rd ed.). torch popular library. https://books.google.co.id/books/about/Aroma_Terapi.html?id=htvEDQAAQBAJ&redir_e=sc=y
- Dwi Rukma Santi STIKES Nahdlatul Ulama, (2016). The Effect of Blended Peppermint and Ginger Oil Aromatherapy on Nausea in First Trimester Pregnant Women at the Rengel Health Center, Tuban Regency
- Yuli Yantina, et al (2016). The Effect of Administering Peppermint Essential Oil on the Intensity of Nausea and Vomiting in First Trimester Pregnant Women in Way Harong Timur Village, Way Lima District, Pesawarandalam Regency: <https://core.ac.uk/download/pdf/299438393.pdf>
- Royal College of Obstetricians and Gynaecologist, (2016). The management of Nausea and vomiting of pregnancy and Hyperemesis Gravidarum: 1-27.
- Santi, & Dwi Rukma. (2013). The effect of Blended Peppermint and Ginger oil aromatherapy on nausea in first trimester pregnant women at the Rengel Health Center, Tuban Regency in <http://www.academia.edu> accessed on 25 February 2021.
- Jennings, L., & Krywko, D. 2021. Hyperemis Gravidarum. <https://www.ncbi.nlm.nih.gov/books/NBK532917/>.